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(54) RANDOM UNIT GENERATOR AMUSEMENT DEVICE

(71) I, CLARENCE LOUIS ELDER, a citizen of the United States of America, of 2400 Greenmount Avenue, Baltimore, Maryland 21218, United States of America,

do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to game apparatus for a game of chance and skill in which a player attempts to match a machine selected unit by a player preselected unit.

In the present invention a player selects, by using a keyboard, a series of indicia hereinafter called units and then starts a machine having a random unit selection device which will select one or more units either automatically or when stopped by the player which may or may not match the units selected directly by the player. When one or more of the player selected units match the machine selected units the player is rewarded.

In a modified form of the invention the player is also enabled to select a horse to run in a simulated horse race and if his preselected units match the machine selected units the player is advanced to the horse race and his winning is determined by the finish position of the horse he preselected.

The primary object of the invention is to provide a game in which a player matches his skills against machine selected elements both of which are displayed in side by side relation. Another object of the invention is to provide a device of the character above in which a sweepstake involving a simulated horse race may be combined with the player selected unit matching system.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings.

Figure 1 is a perspective view game apparatus of the invention.

Figure 2 is a perspective phantom view of apparatus similar to but modified slightly with respect to that illustrated in Figure 1.

Figure 3 is a perspective view of the number projection device forming a part of the apparatus illustrated in Figures 1 and 2.

Figure 4 is a block diagram of the apparatus illustrated in Figures 1 and 2.

Figure 5 is a wiring diagram of the random number generator.

Figure 6 is a perspective view of a modified form of the invention.

Figure 7 is a block diagram of the device illustrated in Figure 6.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures the reference numeral 10 indicates generally a game machine constructed in accordance with the invention.

The game 10 is housed in a console 11 having a control panel 12, a display panel 13, and a comparison panel 14.

The control panel 12 has a 0-9 keyboard 15, a start button 16, and a stop button 17. A token or disk slot 18 is provided for receiving the player's disk to start the game. The dropping of one disk permits the player to play one round and to select one unit which is then displayed in the player selection portion 19 of the comparison panel 14.

Displayed on the display panel 13 are indicia 20 having instructions for the player in playing the game as well as giving the odds for each round of play. A group of number units 21 from 0-9 and including two additional units is arranged on

the display panel 13 with each unit thereof random fashion during each round of play. In Figure 3 there is illustrated the display being separately lit in a rapidly changing of an individual one of the group of number units 21 and consists of a screen 22, pattern 23, and diffusion screen 24 mounted in front of a light 25. When the light 25 is lit the pattern of the unit on the pattern 23 is projected onto the screen 22 so as to become fully illuminated. The screen 22 may be softly illuminated by general background light passing through the pattern 23 when the light 25 is not energized.

In Figure 2 there is illustrated the general makeup of the game 10 in which a random generator 26 is provided for selecting the unit to be displayed on the display panel 13. A comparison memory bank 27, calculator 28, and a ticket printing mechanism 29 are all provided for the operation of the game 10. In the comparison panel 14 a machine selection portion 30 is provided for displaying the machine selection for comparison with the player selection displayed at 19.

Referring now to Figure 4 a block diagram is provided for illustrating the construction and operation of the game 10. An oscillator 31 is provided for supplying the electrical input to the random number generator 26. The oscillator 31 may provide a constant signal to the random generator 26 or it may fluctuate if this be desired. The random generator 26 operates constantly as long as the oscillator 31 is energized which may be either continuously when ever the game 10 is plugged in or may be controlled by an off-on switch (not shown). The random generator 26 feeds a signal through a temporary storage computor 32 and then to the display panel 13 so that each of the units displayed on the display panel 13 are lit in a random manner for a very brief period of time in quick succession. Actuation of the stop button 17 causes the unit then in the temporary storage computer 32 to be temporarily locked and its display on the display panel 13 continues for a longer period of time.

The signal from the random generator 26 is also simultaneously conveyed to a 1st unit storage computer 33 through which it is connected to the 1st unit display portion 30. When the stop button 17 is pressed to temporarily store in the computer 32 and display on panel 13 the 1st unit, the same unit will be displayed in the 1st unit display 30 under control of the computer 33. Upon release of the stop button 17 the temporary storage computer 32 is released and the signal from the random generator 26 again is passing through the computer 32 onto the display panel 13.

Prior to the operation of the random generator and the selection of a unit thereby combined with the stop button 17 the player drops his disk in the disk slot 18 and presses one of the keys on the keyboard 15 to select a unit for display in the 1st unit position of the player selection portion 19. Under control of an input programmer 34 this unit is stored in the 1st unit storage computer 35 and is simultaneously displayed in the 1st unit position of the player selection portion 19.

If a second disk is dropped into the disk slot 18 the player actuates a unit on the keyboard 15 and this is directed by the input programmer 34 to the 2nd unit storage computer 36 for display at the 2nd unit position of the player selection portion 19. Similarly a third disk permits the selection of a unit from the keyboard 15 which is directed to the 3rd unit storage computer 37 and from there to the 3rd unit display position of the player selection portion 19. After the player has finished the dropping of disks and selection of units whether it be one unit, two, three or more units, he presses the start button 16 to operate the start-stop programmer and timer 38 to make the 1st unit machine selection as described above. In the event that the player has dropped only one disk and selected only one unit displayed in the first position of the player selection portion 19 the programmer and timer 38 will permit a comparison to be made in the comparison memory bank 27 and if the first unit of the player selection and the first unit of the machine selection are identical the calculator 28 will cause one or more disks or a printed ticket to be delivered to the player.

In the event that the player selects additional units for display in the 2nd and 3rd positions the programmer and timer 38 will maintain the operation of the machine until a 1st unit, 2nd unit and 3rd unit have been selected, displayed and compared with the 1st unit, 2nd unit and 3rd unit respectively of the player selection. In the event that the player fails to press the stop button 17 in a reasonable period of time the start-stop programmer and timer 38 will automatically stop the operation long enough to produce a 1st unit selection, then a 2nd unit selection and finally a 3rd unit selection and so on.

The calculator 28 will determine the correct odds from the selection made. Obviously as the degree of difficulty increases by selecting 2nd and 3rd units the odds will be increased to the player. As the 2nd unit is selected by pressing the stop button 17 or by operation of the timer 38 it will be stored in the 2nd unit storage computer 39 and finally as the third unit is selected it

will be stored in the 3rd unit storage computer 40.

Referring now to Figure 5 the random generator 28 is illustrated in detail. The random generator 26 is fed by the oscillator 31 and includes 8 type "D" flip-flops 41a, 41b, 41c, 41d, 41e, 41f, 41g and 41h. The flip-flops 41 each have five lettered terminals with the letters S indicating direct set input, the letter Q output, the letter R direct reset input and the letter O oscillator input and the letter D data input. The oscillator 31 is wired to the oscillator input of each of the flip-flops 41 in parallel while the direct reset input terminal R of each of the flip-flops 41 are wired together in parallel. The direct set input S terminal of each of the flip-flops 41 are wired in parallel and the output terminal Q of the flip-flop 41a is wired to the data input terminal D of the flip-flop 41b. The output terminals Q of each of the flip-flops are wired to the next adjacent data input terminal D. A half adder 42a has its output terminal O wired to the data input terminal D of the flip-flop 41a. A second half adder 42b has its output terminal O wired to one of the input terminals of the half adder 42a. A third half adder 42c has its output terminal O wired to the other input terminal of the half adder 42a. One of the input terminals of the half adder 42b is wired to the connection between the output terminal Q of the flip-flop 41a and the data input D of the flip-flop 41b. The other input terminal of the half adder 42b is wired to the connection between the output terminal Q of the flip-flop 41b and the data input terminal D of the flip-flop 41. The half adder 42c has one input terminal thereof wired to the connection between the output terminal Q of the flip-flop 41g and the data input terminal D of the flip-flop 41h. The other input terminal of the half adder 41c is wired to the output terminal Q of the half adder 41h.

An 8 bit binary-to-12 line decoder 43 is wired to each of the output terminals Q of the flip-flops 41.

The circuit of the random generator 26 comprises an 8 bit serial-input, parallel output shift register with closed-loop feed back through a series of three half-adders 42 to complete the loop. Four stages must be tapped to achieve a full length binary pseudo-random code from the shift register. A register-capacitor network is used to preset the stages to a logical "one" during power supply turn-on to prevent the register from initially starting in an "all-zeroes" condition, for this state is forbidden in a pseudo-random code sequence. A conventional oscillator is used to keep all stages of the register in parallel. The 8 bit binary-to-12 line decoder is used to decode the pseudo-random binary sequence into 12 characters displayed on the display panel 13.

Playing instructions required for the player of the present apparatus are as follows: Play single, double, or triple round games. Single round game (insert one disk and select one unit), double round game (insert two disks and select two units), triple round game (insert three disks and select three units.)

After you have finished selecting start the machine by pushing the button marked "start", and then try to stop the machine on your selection by pushing the button marked "stop" when you see your selection flash on the screen. Note: start and stop once for a single round, twice for a double round and three times for a triple round game.

In operation, in a single round game, insert one disk in the disk insert slot. Select one unit from the keyboard by pushing a selected key. The selected unit is displayed above the keyboard in the player selection portion 19. Push the start button to activate the round. Place your hand on or near the stop button and watch display screen for your selection to appear and push the stop button to try to stop the machine on your selection. If the preselected unit and the machine derived unit match the player wins.

In a double round game the player drops two disks, selects two units and the machine is operated twice before the player wins.

In a triple round game the machine is operated three times after three disks have been inserted and three units selected. The machine is operated three times before the player wins should the player match the three units set up by the machine.

It should be noted that while the disclosure illustrates separate computer units 32, 33, 35, 36, 37, 39, 40, 27 and 28 it would be relatively simple to combine these units into a single multi-purpose computer to accomplish the result. In Figures 6 and 7 a modified form of the invention is illustrated wherein the mechanism of the basic game 10 is utilized but includes an added event selection.

In Figure 6 the modified game is illustrated generally at 44 and is particularly designed for remote operation. The game 44 includes a plurality of control boxes 45 which are arranged in remote locations for operation by individual players. Each control box 45 includes a 0-9 keyboard 46, a 1-12 selector button group 47, a display panel 48, disk slot 49 and a start button 50.

A cabinet 51 has a random unit display area 52 and a machine selected unit dis-

play 53.

A stop button 54 and a start button 55 are mounted on the side of the cabinet 51 for use as described.

A second cabinet 56 is provided having a simulated horse race display in the upper portion thereof and a winner's position display 58 therebelow. A stakes display 59 is positioned below the winner's display to show the winning odds.

In Figure 7 a block diagram illustrates the additions to the block diagram of Figure 4 to add the sweepstakes feature to the basic game 10. A horse selection memory bank 60 is used in conjunction with the elimination memory bank of Figure 4 and is connected to the display 57, 58 through the elimination memory bank 27 which in this embodiment has 12 positions. A memory bank 61 is connected to the hose selection memory bank and to a mechanism for calculating the winnings (not shown).

In the modified game 44 illustrated in Figures 6 and 7 the game is played exactly the same manner as in the game 10 illustrated in Figures 1 through 5 with the exception that following the selection of the third unit a number from 1 to 12 is selected in the selector button group 47 and depressed to be displayed on the display 48. This number corresponds to one of twelve horses to take part in a simulated race displayed on the display panel 57. Presuming that the player matches the three units with the three units posted on the display 53 he is then a part of the sweepstakes and a ticket 62 issues from the control box 45 showing that he has the winning combination of units 472 and the horse 12 for the horse race.

The horse race is then run by operating the control box 63 and the finish position of the horses and the stakes are displayed on the panels 58, 59. The player by observation determines his winnings.

It should be understood that the oscillator, storage computers, display units, input programmer, keyboard, start-stop programmer and timer, payout calculator, and the various computers are each conventional constructions which have been incorporated into applicant's game.

It should be understood that the principles of the game described above may be applied to games and similar devices without departing from the the invention as claimed in the appended claims.

WHAT I CLAIM IS:—

1. A game apparatus comprising first player control means, for preselecting and indicating the selection of at least one unit, random unit generator means for rapidly and momentarily displaying in random sequence units of a class including the unit or units selected by the player, second player controlled means for causing the continuous display of a given unit of those displayed by said random unit generator if the second player controlled means is actuated simultaneously with the display of said given unit by said random unit generator, said second player control means being repeatedly operable to continuously display up to the number of preselected units, the player in operating said second player control means attempting to cause the continuous display of at least one unit corresponding to at least one preselected unit to thus achieve a match, and means operable by a matching of said unit or units displayed by operation of the said second player controlled means with the unit or units displayed by operation of said first player controlled means for indicating such matching.

2. A game apparatus as claimed in Claim 1 having a memory means for storing at least one preselected unit to be compared with a subsequently selected unit or units designated by the random unit generator.

3. A game apparatus as claimed in Claim 2 where at least one preselected unit is stored and is comparable with a subsequent unit selected by the random generator means.

4. A game apparatus as claimed in Claim 1, 2 or 3 wherein the random unit generator means to rapidly and momentarily display a plurality of units in random sequence is automatically operated after a given period of time to cause the random generator to select at least one unit for matching the same with a preselected unit in absence of the second player controlled means being operated.

5. A game as claimed in Claim 1, 2, 3 or 4 wherein the random unit generator contains units other than those preselectable by the player.

6. A game as claimed in Claim 1 including means causing the random unit generator to operate during the game including means for the random unit generator to cause the selection of at least one unit.

7. Game apparatus substantially as hereinbefore described with reference to and as illustrated in Figures 1 to 5 or 1 to 7 of the accompanying drawings.

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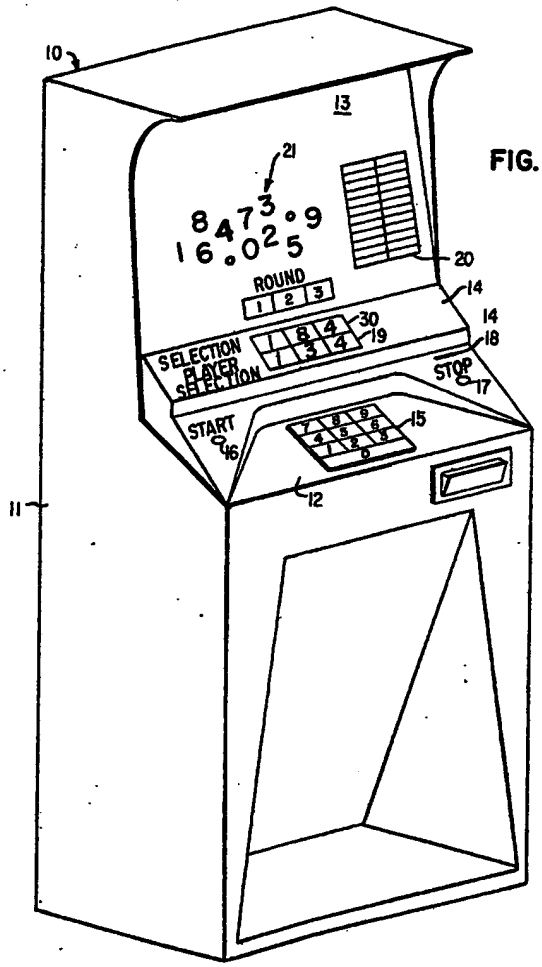

FIG. 1

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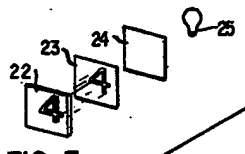

FIG. 3

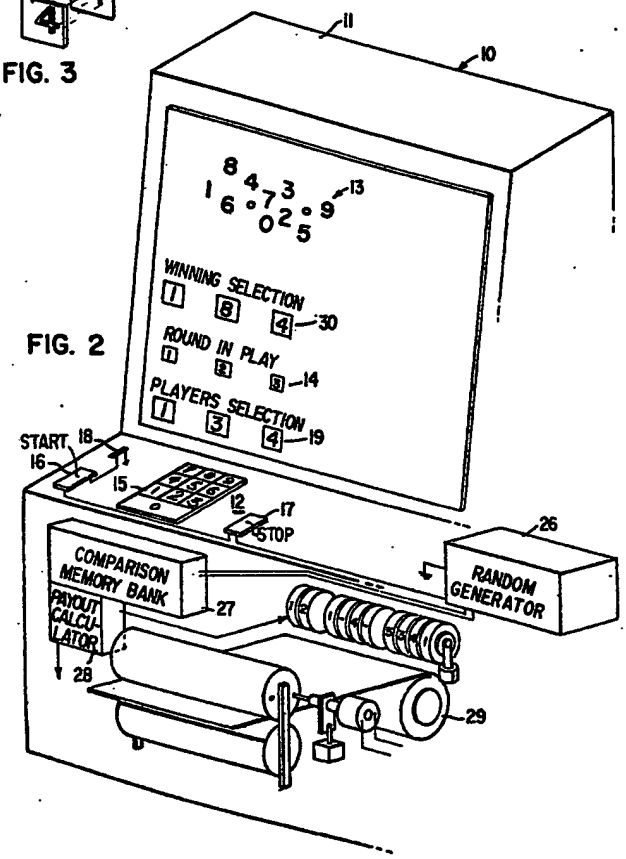

FIG. 2

1428157 COMPLETE SPECIFICATION
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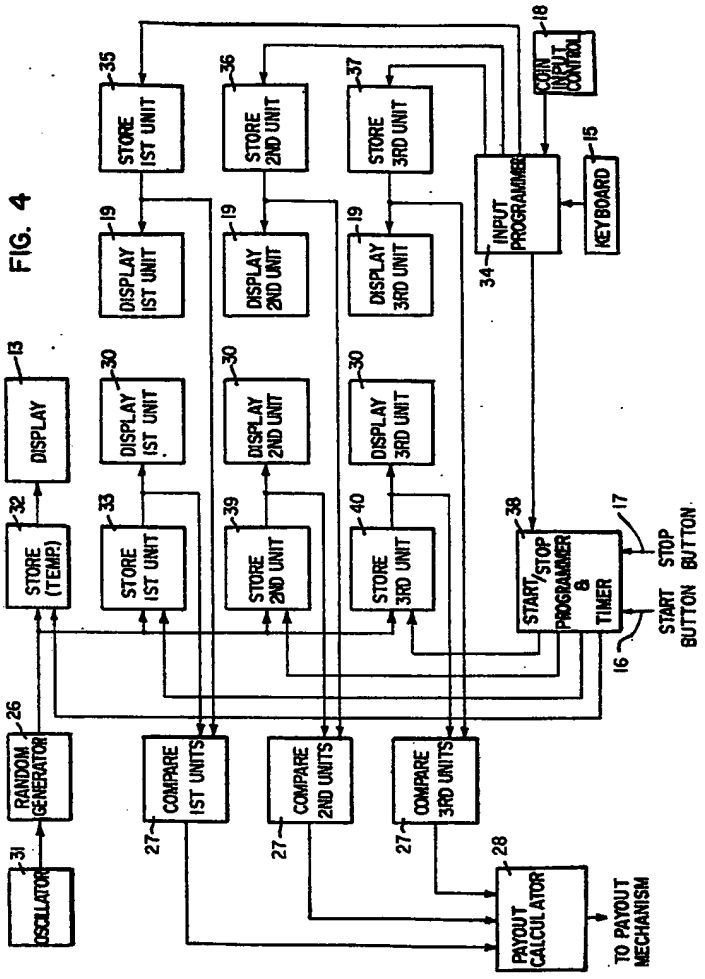
Sheet 3

FIG. 4



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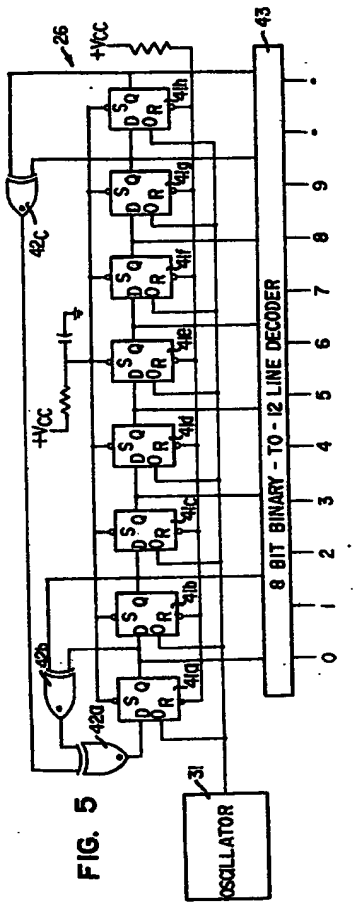

FIG. 5

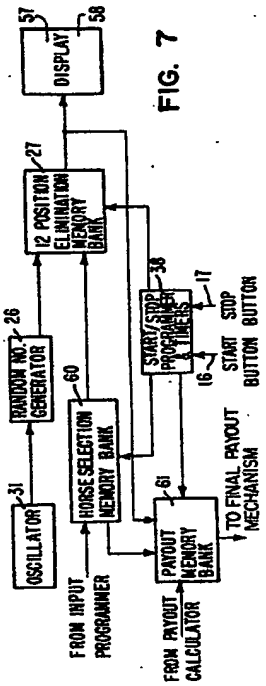

FIG. 7

1428157 COMPLETE SPECIFICATION
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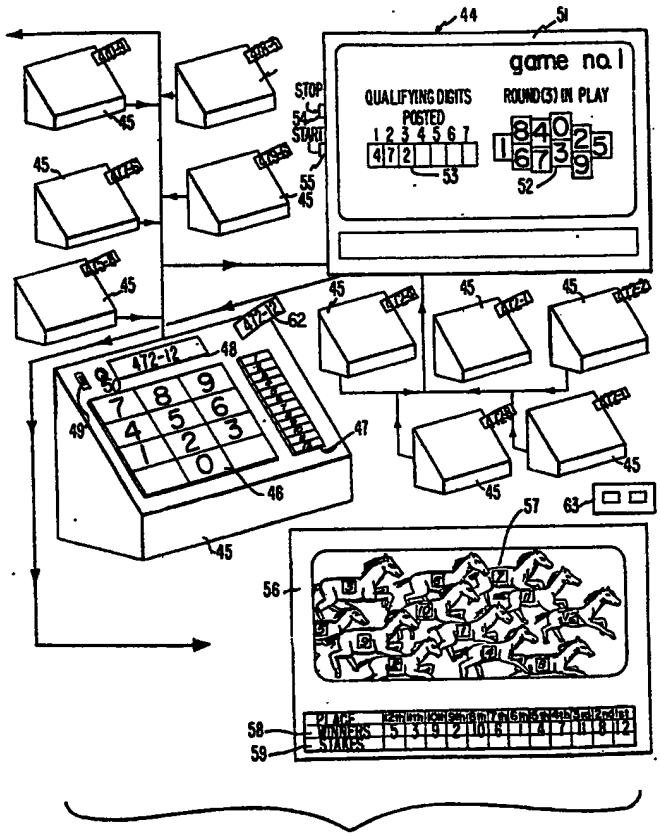

FIG. 6

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